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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,362	10/14/2003	Gary Hillman	THERM 3.0-007 DIV	4398
530	7590	09/27/2005	EXAMINER	
LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090			ARANCIBIA, MAUREEN GRAMAGLIA	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/685,362

Applicant(s)

HILLMAN ET AL.

Examiner

Maureen G. Arancibia

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 8-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I, Claims 1-7 in the reply filed on 6 September 2005 is acknowledged.
2. Claims 8-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6 September 2005.

### *Specification*

3. The disclosure is objected to because of the following informalities: it is suggested to add "now U.S. Patent No. 6,666,949," on Line 3 of Paragraph 3.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. **Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claim 3 recites the limitation "said fluid" in Line 1. There is insufficient antecedent basis for this limitation in the claim. It is suggested to replace the word "fluid" with "liquid" on both Lines 1 and 2 of the claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Application Publication 63-065066 to Aoyanagi (from Applicant's IDS). The following rejection refers to the Figures and English Abstract of this document.**

Aoyanagi teaches a method of holding a workpiece 8 at a substantially uniform temperature (Abstract, Purpose, Lines 1-2), comprising: maintaining the workpiece on a holding surface 4 in heat transfer relation with the interior of a chamber (Figure 1; Abstract, Constitution, Lines 6-7); vaporizing a liquid disposed within the chamber to form vapor by supplying heat to the interior of the chamber via the heated substrate holder 1 (Abstract, Constitution, Lines 8-9); and condensing the vapor in a condenser 7 in communication with the chamber (Figure 1), said vaporizing and condensing steps being performed so that at least some liquid and some vapor are present in said chamber and so that the vapor continually flows within said chamber and flows to said condenser (*the liquid is thereby circulated*; Abstract, Constitution, Lines 8-15).

In regards to Claim 2, Aoyanagi teaches that liquid is returned from said condenser to said chamber. (Abstract, Constitution, Line 11)

In regards to Claim 4, Aoyanagi teaches that the condenser 7 projects upwardly from the chamber (Figure 1), and that the step of returning liquid from the condenser to the chamber includes allowing the liquid to drain from the condenser into the chamber by gravity (Figure 1; Abstract, Constitution, Lines 8-11).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyanagi in view of 4,582,121 to Casey (from Applicant's IDS).**

The teachings of Aoyanagi were discussed above.

In regards to Claim 3, Aoyanagi does not expressly teach that the liquid is an aqueous liquid.

Casey teaches that a heat transfer liquid can be water. (Column 2, Lines 59-61)

It would have been obvious to one of ordinary skill in the art to use water as the heat transfer liquid in the method of Aoyanagi. The motivation for making such a modification, as taught by Casey (Column 6, Lines 12-14), would have been to use a liquid with a high heat transfer coefficient.

10. **Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyanagi in view of U.S. Patent 6,229,116 to Shirakawa et al. (from Applicant's IDS).**

The teachings of Aoyanagi et al. were discussed above. Aoyanagi further teaches that a process (vapor deposition) is performed on the workpiece while it is maintained at a uniform temperature. (Abstract, Purpose)

In regards to Claims 5-7, Aoyanagi does not expressly teach that the workpiece is a semiconductor wafer, that the processes performed on the workpiece while it is maintained at a uniform temperature include baking a photoresist, or that prior to baking the photoresist, the photoresist is exposed to patternwise illumination.

Shirakawa et al. teaches a method of maintaining a semiconductor wafer at a uniform temperature while a photoresist on the wafer is baked (Column 5, Line 63 - Column 6, Line 14; Column 7, Lines 28-41), and that prior to the baking step, the photoresist is exposed to patternwise illumination (*in a photolithography process*; Column 1, Lines 9-16; Column 4, Line 25).

It would have been obvious to one of ordinary skill in the art to modify the method taught by Aoyanagi to maintain a semiconductor wafer at a uniform temperature while a photoresist is baked, and prior to the baking, to expose the photoresist to patternwise illumination. The motivation for making such a modification, as taught by Shirakawa et al. (Column 1, Lines 4-28 and Column 3, Lines 6-11), would have been to obtain a photoresist film in a desired quality and thickness for manufacturing a semiconductor device circuit.

### ***Conclusion***

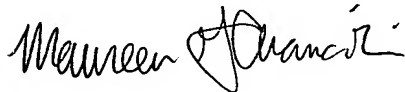
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571)

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272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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